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**Remarks**

Claims 1-21 are pending in the application and stand rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 6,240,386 issued to Thyssen et al. By this response, Applicant has amended claims 1, 12 and 15. Claims 1-21 remain pending in the application for further consideration by the Examiner.

**Objections to Drawings**

The Examiner objected to Figures 1 and 2 of Applicant's drawings. Applicant has amended Figures 1 and 2 to include the legend "Prior Art" as suggested by the Examiner. The revised drawings, with appropriately included "Replacement Sheet" labels, are attached to this response for acceptance by the Examiner.

**Rejections Under 35 U.S.C. 102**

Claims 1-21 were rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 6,240,386 issued to Thyssen et al. (hereinafter referred to as "Thyssen et al."). Claims 1, 12 and 15 have been amended and this ground of rejection is respectfully traversed for at least the following reasons.

Applicant's claim 1 requires estimating a noise level of the voice signal using the excitation parameter that is obtained directly from the partially decoded bit stream. Claim 12 requires estimating a noise level of the speech signal using the fixed codebook excitation component and the adaptive codebook excitation component obtained directly from the partially decoded bit stream. And finally, independent claim 15 requires a noise estimator operable to estimate a noise level in the speech signal using the excitation parameter that is directly obtained from the partially decoded bit stream.

Because the noise level estimate is derived directly from the excitation value of the speech signal, e.g., fixed codebook gain, rather than from a fully decoded PCM signal, a significant reduction in computational complexity can be realized as compared to PCM signal-based noise estimation in the prior art, such as that taught by Thyssen et al. In particular, only partial decoding is required to unpack the excitation parameter(s) in Applicant's claimed invention as opposed to fully decoding and reconstructing a fully synthesized PCM signal as in the prior art arrangements.

Applicant does not agree that the referenced description in Thyssen et al., which is used as the basis for rejecting all of the Applicant's claims, teaches or even suggests partially decoding an encoded signal to then estimate a noise level of a voice signal by directly using the excitation parameter obtained by that partial decoding.

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Instead, Applicant respectfully submits that the teachings in Thyssen et al. clearly describe calculation of the noise estimate in a substantially different manner. For example, Thyssen et al. describe that a running average energy of the background noise is calculated, which is derived from the energy of the current input signal (see, e.g., col. 27, lines 34-43). More specifically, the teachings by Thyssen et al. contemplate encoding/decoding speech in its entirety and, for the decoding process in particular, a full decoder must be employed to synthesize the speech signal so that conventional noise estimation can be applied to derive a noise estimate from the signal's energy.

Deriving a noise estimate from an encoded speech signal according to Thyssen et al. as well as other prior art teachings requires a computationally-intensive process to decode the entire signal to derive the desired signal parameters and then multiple computational blocks prior to the use of such parameters for noise estimation.

As specifically mentioned in Applicant's specification, the Applicant's claimed invention is directed at solving this particular problem, i.e., reducing the computational complexity associated with noise estimation of an encoded speech signal. Applicant achieves this result by partially decoding the bit stream to extract the excitation parameter and then directly using the excitation parameter, from the partially decoded signal, as direct input for estimating noise. In this manner, the intermediate processing associated with the full decoding approach used by Thyssen et al. and others can be avoided.

Because Thyssen et al. neither teach nor suggest each and every element of Applicant's independent claims 1, 12 and 15, as amended, these claims are therefore not anticipated by Thyssen et al. Accordingly, Applicant respectfully submits that claims 1, 12 and 15 are allowable over Thyssen et al. and requests that the rejection under 35 U.S.C. 102 be withdrawn.

Since independent claims 1, 12 and 15 are allowable over Thyssen et al., so too are dependent claims 2-11, 13-14, and 16-21, all of which include all the elements from their respective base claims (independent claims 1, 12, 15).

### **Conclusion**


It is respectfully submitted that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, he is invited to call Applicant's attorney so that arrangements may be made to discuss and resolve any such issues.

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If any additional fees are due with respect to this amendment, please charge them to  
Deposit Account No. 12-2325.

Respectfully submitted,

  
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